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Cooperative
**ECONOMIC INSECT
REPORT**

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JUL 25 1968

CURRENT SERIAL RECORDS

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMYWORM requiring control in corn and small grain in west-central Minnesota. CORN EARWORM heavy and damaging in Madison County, Mississippi. CORN LEAF APHID heavy on sorghum in northeast Oklahoma and Chaves County, New Mexico; numbers significant on sorghum in Kansas and Nebraska. POTATO LEAFHOPPER increasing on legumes in Vermont and soybeans on Eastern Shore in Maryland; economic on alfalfa throughout much of Ohio. (pp. 661-662).

EUROPEAN CORN BORER infestations worst in 20 years in central and western Virginia. (p. 663). SOUTHWESTERN CORN BORER infestation probably highest ever in extreme southern Illinois. WESTERN CORN ROOTWORM damage severe on corn in some areas of Texas County, Oklahoma. NORTHERN CORN ROOTWORM damage severe in untreated corn in Wisconsin. (pp. 664-665).

PEA APHID heavy in alfalfa seed fields in Humboldt County, Nevada, and in second-crop alfalfa in McKenzie County, North Dakota. LYGUS BUGS increasing in alfalfa in Arkansas Valley of Colorado. (p. 667).

LESSER CORNSTALK BORER destroyed young soybean stand in Covington County, Alabama. (p. 668).

BOLL WEEVIL controls general on cotton throughout central and southern Alabama. BOLLWORMS heavy in numerous fields in same area. (pp. 668-669).

PALE-STRIPED FLEA BEETLE damaging beans in Cheyenne and Sedgwick Counties, Colorado, and Converse County, Wyoming. (p. 672).

ORIENTAL FRUIT MOTH caused much damage to peach in Nacogdoches County, Texas. APPLE MAGGOT emergence increased greatly at Storrs, Connecticut. (p. 673).

JACK-PINE BUDWORM caused severe browning on 5,000-10,000 acres in Juneau County, Wisconsin. (p. 676).

MOSQUITOES heavy and annoying in Wisconsin and Michigan; heaviest in several years in Maine. (p. 677). FACE FLY increased rapidly on cattle in Indiana; annoyance severe in St. Croix County, Wisconsin. (p. 678).

WHITE-FRINGED BEETLES damaging soybeans in Monroe County, Alabama, and Union County, North Carolina; reported for first time in Missouri. (p. 680).

Detection

New State records include LETTUCE ROOT APHID in North Carolina (p. 676) and a WHITE-FRINGED BEETLE in Missouri. (p. 680).

For new county records see page 682.

Special Report

The Spotted Mediterranean Cockroach in the United States. (pp. 684-686).

Reports in this issue are for week ending July 12 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-JULY TO MID-AUGUST 1968

The Weather Bureau's 30-day outlook is for temperatures to average above seasonal normals in the Northeast as well as over most of the northern and central Plains and the Great Basin. Below normal temperatures are indicated for the north Pacific coast and also for the southern Plateau, the southern Plains, and the west gulf coast region. Elsewhere near normal temperatures are in prospect. Precipitation is expected to exceed normal in the North and South Atlantic Coast States, the north Pacific coast, and from the southern Plateau eastward to the west gulf coast region. Subnormal precipitation is indicated for the Middle Atlantic Coast States, central portions of the Appalachians, and the northern Plains, while little or no rainfall is expected over California. In unspecified areas near normal rainfall is anticipated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D. C. 20250. Price \$5.00 a year.

WEATHER OF THE WEEK ENDING JULY 15

HIGHLIGHTS: Typical July weather prevailed over most of the Nation - hot humid with spotty afternoon and evening thundershowers, mostly light to moderate, a few very heavy.

PRECIPITATION: Showers and thunderstorms occurred along the leading edge of a cold front that, early in the week, extended from Missouri to New England and in the hot humid air south of the front. Heavy rains fell in the first half of the week over parts of the South Atlantic and Gulf States. Showers in eastern Mississippi began on Monday and by 7 a.m. Tuesday, 15.68 inches had fallen at Columbus. Generous thundershowers occurred over the Great Lakes region, the Ohio River Valley, and in parts of the Northeast on Tuesday and Wednesday. A severe thunderstorm at Auburn, New York, on Tuesday evening was accompanied by strong winds which blew down a circus tent injuring many persons. The thunderstorms in the Carolinas and Virginia increased in intensity from Tuesday to Thursday but were generally lighter over the weekend. Numerous drought relieving showers in Florida, some locally heavy, became lighter during the latter half of the week. Weather of the Week continued on page 682.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - MINNESOTA - Ranged 4-12 per square yard on barley, wheat, and corn in Chippewa, Swift, and Stevens Counties; mostly early instars with few nearly full-grown larvae in some fields. Controls started in some areas and expected to increase. Found occasionally on small grain and corn in other districts. (Minn. Ins. Rpt.). WISCONSIN - Averaged 1 larva per 30 row feet of oats in Rock and Dane Counties; damage light to some corn. (Wis. Ins. Sur.). ILLINOIS - Evident in grassy cornfields in northern half of State. (Ins. Sur. Bull.). MICHIGAN - Problems light to light-moderate in 6 wheatfields. Mostly third instars ranged 7-38 per 25 row feet. (Newman, July 8). MARYLAND - Adults averaged 12 per night June 25-July 1 and 4 per night July 1-8 at Centerville, Queen Annes County. Larvae infested 1 percent of 100-acre cornfield near Crumpton. (U. Md., Ent. Dept.). MAINE - Remains low despite large numbers of adults active in early season as indicated in blacklight traps at Monmouth. Only one report to date of larvae damaging hay. (Boulanger, July 5).

ASTER LEAFHOPPER (Macrosteles fascifrons) - NORTH DAKOTA - Ranged 12-80 (average 30) per 100 sweeps in flax fields in Traill and Grand Forks Counties. (Brandvik). MICHIGAN - Still problem in State. (Bath, July 8).

BEET LEAFHOPPER (Circulifer tenellus) - ARIZONA - Averaged 20 per 100 sweeps on sugarbeets in Cochise, Cochise County. (Ariz. Coop. Sur.).

CORN EARWORM (Heliothis zea) - NEW YORK - Adult emergence begun July 3 from pupae in laboratory; undetected in fields in Hudson Valley. (N.Y. Wkly. Rpt.). ARKANSAS - Eggs averaged 2 per corn silk in Jefferson County. (Boyer). MISSISSIPPI - Heavy in Madison County; damage moderate to heavy to developing ears. (Dinkins). TEXAS - Light in all cornfields examined in Limestone, Bell, Falls, Milam, and Robertson Counties. (Green). OKLAHOMA - Larvae infested 15 percent of field of sweet corn in Jefferson County. Ranged 0-3 per ear on 24 ears of sweet corn in Mayes County; all ears damaged. (Okla. Coop. Sur.). KANSAS - Infestation averaged 4-10 percent on Brown and Doniphan County corn; mostly late instars feeding in whorls in all cases. (Simpson). NEBRASKA - Second to fifth instars light, about 1 per 100 sweeps, in 2 alfalfa fields in Lancaster County. Mostly fifth instars in about 5 percent of corn plants in field near Auburn, Nemaha County. (Keith, Roselle). CALIFORNIA - Larvae medium on corn plantings in Corning, Tehama County. (Cal. Coop. Rpt.).

CORN LEAF APHID (Rhopalosiphum maidis) - MARYLAND - Light on Eastern Shore. Heaviest to date on 5 percent of 55-acre stand near Roseville, Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Infested 20 percent of tassels in 10-acre cornfield in Appomattox County. Aphids ranged 4-100 per infested tassel. (Allen). ALABAMA - Medium to heavy in most corn examined in Lawrence, Blount, and other northern counties. One field in Madison County cut due to heavy damage from probably maize dwarf mosaic disease. R. maidis may be vector of this disease. (Magnusson et al.). ARKANSAS - Present on sorghum in White County. (Barnes). INDIANA - Nymphs and apterae 5-25 per plant on 60 percent of tassel-in-whorl and tasseling corn in south-central district; colonies of 100 per plant on less than 1 percent of corn. Southeast district corn very late; aphids mostly on Johnson grass in area. Alates and nymphs 1-50 (average 8) per plant on 30-50 percent of corn 42+ inches high in central districts; heaviest in east-central district. (Huber). Colonies of 25-100 wingless forms per plant on 2 percent of early corn in Wanatah area. (Matthew). ILLINOIS - Increasing; heavy on few plants in some cornfields in southwestern area. Alates and apterae found on grasses and in whorls of corn. (Ins. Sur. Bull.). Occasionally whorls of corn completely covered. (Ill. Ins. Rpt.). WISCONSIN - Colonies forming in whorls of corn; incidence appears higher than normal in fields examined. Orius insidiosus common predator in most fields; may control populations. (Wis. Ins. Sur.). NEBRASKA - Infested about 2 percent of plants in 16 Dawson County cornfields; numbers light with no colonies established. (Pruess). Ranged 0-1,000 (average 600) per sorghum plant in fields near Auburn, Nemaha County. (Roselle). Ranged 25-1,200 (averaged 350) per sorghum plant in 5 fields checked in Seward

and Saline Counties; 85-98 percent of plants infested. (Keith). Heavy in scattered fields in Franklin County. (Congrove). KANSAS - Numbers variable; ranged from 5-10 to 1,500+ per plant in Riley, Pottawatomie, Jackson, Doniphan, Brown, Nemaha, and Marshall Counties. Heavier in sorghum than in corn. (Simpson). MISSOURI - Light to moderate in whorls of grain sorghum throughout west-central area; some controls applied. (Munson). OKLAHOMA - Continues heavy in grain sorghum in northeast areas. (Okla. Coop. Sur.). TEXAS - Light in sorghum heads in field near Lott, Falls County. (Green). NEW MEXICO - Heavy in sorghum checked in Chaves County. (Eubank, Dickerson).

GREENBUG (*Schizaphis graminum*) - NEBRASKA - Remains active on sorghum in east and southeast areas. Aphids ranged 50-100 per leaf in 24-inch sorghum in Nemaha County. (Roselle). Ranged 0-75 (average 20) per plant on about 45 percent of sorghum plants in 5 fields in Seward and Saline Counties. (Keith).

PAINTED LADY (*Vanessa cardui*) - NORTH DAKOTA - Larvae ranged up to 20 (average 8) per 100 sunflower plants in Grand Forks and Traill Counties. (Brandvik).

PICKLEWORM (*Diaphania nitidalis*) - GEORGIA - Moderate on squash in Tift County. (French, July 6).

POTATO LEAFHOPPER (*Empoasca fabae*) - VERMONT - Increasing rapidly on legumes. (MacCollom). MARYLAND - No buildup to date on alfalfa in central area. Increasing in alfalfa on Eastern Shore. Ranged 5-15 per sweep in Queen Annes County alfalfa. Light, increase begun on Eastern Shore soybeans. (U. Md., Ent. Dept.). VIRGINIA - Light, some yellowing of peanut foliage. (Smith). OHIO - Economic on alfalfa through much of State. Ranged 5-19 (average 11) per sweep in fields in Madison, Highland, Clinton, Franklin, Logan, and Union Counties. Yellowing beginning to appear in majority of fields sampled. (Rose). Increased rapidly in Wayne, Medina, and Ashland Counties. Mostly 1-2 per sweep, but 5+ and up to 15 per sweep reported. Some yellowing. (Glass, Thoburn). Counts of 10 per sweep June 24 on Sandusky County alfalfa. (Maddy). Counts of 1.5 per sweep damaged 50 percent of leaves in Wood County. (Nicholson). INDIANA - Second cutting of alfalfa 20 percent complete July 5. Adults 1-14 per sweep on second-growth alfalfa in southern and central districts. Damage likely on third-growth alfalfa this season. (Huber). WISCONSIN - Relatively high numbers appearing on alfalfa, beans, and potatoes. Up to 11 per sweep in some alfalfa; 50 percent nymphs; generally averaged 1 per sweep. Numerous on snap beans in Waushara County; few adults on lima beans in Rock County but counts lower than on other crops. (Wis. Ins. Sur.). MINNESOTA - Heavy only in some central counties. Ranged 100-200 per 100 sweeps in alfalfa in Carver, McLeod, and Wright Counties; 5-10 per plant on potatoes in Sherburne County. No "hopperburn" noted. (Minn. Ins. Rpt., July 8).

POTATO PSYLLID (*Paratrioza cockerelli*) - COLORADO - Adults economic, 2-4 per 100 sweeps, in potatoes in Alamosa, Conejos, Rio Grande, and Saguache Counties. (Hansen et al.). Undetected in potato fields checked in Otero, Bent, and Prowers Counties. Adults ranged 0-50 per 100 sweeps on matrimony vine; no nymphs or eggs found. (Schweissing).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - NEBRASKA - Light, 0-5 per 10 sweeps, on alfalfa in Lancaster, Saline, and Seward Counties. (Keith). KANSAS - Light, 5-15 per 10 sweeps, in all alfalfa checked in northeast district. (Simpson). ARKANSAS - Collected at rate of 500 per 100 sweeps in Faulkner County alfalfa. Has been absent to very low this season. May increase due to dry weather. (Boyer).

TOBACCO HORNWORM (*Manduca sexta*) - MARYLAND - Remains light. Late instars ranged 1-6 per 50 plants in Calvert County. (U. Md., Ent. Dept.).

TOMATO HORNWORM (*Manduca quinquemaculata*) - MICHIGAN - First specimens (5 adults) collected at Berrien County blacklight station July 1 and 2; one female taken. Egg laying should begin now and larval damage can be expected next 14-21 days, especially in southern tier of counties. (Janes). ILLINOIS - Common on

tomatoes in southern half of State. (Ins. Sur. Bull.). COLORADO - Light on tomatoes in Fowler, Otero County, and Vineland, Pueblo County, areas of Arkansas Valley. (Schweissing).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEW YORK - Hatch continues on early whorl to mid-silk corn in Hudson Valley. Total of 5 first, 10 second, and 6 third instars collected from 2 plants in recently treated planting July 1. Infestation general in about half of plants examined in recently treated green-tassel stage variety July 3; ranged from first instars in leaf sheaths to occasional fifth instars in stalks and forming ears. Total of 26 larvae dissected from 1 plant from treated planting at Fishkill, Dutchess County, July 5. Plant infestation 75 percent in untreated early whorl plants; controls in progress. Fresh egg mass found and occasional moths still active. Some males trapped nearly every night at Poughkeepsie and Hurley. Most larvae survived treatments inside plants, only occasional larvae found dead. Two earliest-sown varieties in mid-silk stage by first week of July. Worst infestation in years due partly to prolonged hatch during the month of June. Activity continues heavy in Monroe County. (N.Y. Wkly. Rpt.). NEW JERSEY - Second and third instars infested 50 percent of sweet corn tassels near Trenton. (Ins.-Dis. Newsltr.). MARYLAND - Adults averaged 6 per night at Centreville, Queen Annes County. Larval infestations ranged 20-85 percent in central area and 7-60 percent on Upper Shore area. Larvae infested 5 percent of sweet corn ears near Preston, Caroline County. (U. Md., Ent. Dept.). DELAWARE - Adults averaged 2-3 per night in blacklight trap collections in Sussex County. (Burbutis). VIRGINIA - First-generation larvae infesting 80 percent of 10-acre cornfield in Appomattox County. Infestation 25-85 percent in many fields in Pittsylvania, Halifax, Buckingham, Hanover, Appomattox, Russell, Fluvanna, and Franklin Counties. Larvae generally not as widespread or as severe in Giles, Bland, and Wythe Counties. Worst year for this species in past 20 years, according to one observer. (Allen). ALABAMA - First-generation larval damage serious in several localized cornfields in tassel stage in Blount and Madison Counties; 1-5 pupae common, numerous moths in flight, and egg laying underway. (Conway et al.). INDIANA - First-generation infestations 10-100 (average 20) percent in south-central district; earliest fields (1-5 percent of total) most heavily infested; fourth instars predominant. Infestations ranged 2-24 percent in southeast district; 10 percent of corn 24 inches or taller. Very light with leaf and whorl feeding on 2-32 (average 6-8) percent of corn in central districts; ranged second to late fourth instar. (Huber). MICHIGAN - Moderate in cornfields in 7 counties; 5-50 percent of knee-high plants infested. Total of 60 percent of larvae second instars and 40 percent first instars. Egg laying greatly decreased, but will continue another 10-14 days. This will lengthen second-brood activity and its associated problems. (Newman, July 8).

ILLINOIS - Infested plants ranged 0-10 (average 2.2) per 100 plants in southeast district and 0-6 (average 1.0) in southwest district; pupation almost 100 percent. Infested plants ranged 28-88 per 100 plants in west-southwest and east-southwest districts; pupation of first generation ranged 10-40 percent. (Ill. Ins. Rpt.). First-generation pupation begun in southern half of State. Pupation almost complete in southernmost counties; moth emergence begun. Pupation ranged 10-40 percent in field corn in south-central area; moth emergence will begin in late July. First-generation larvae ranged 25-90 per 100 plants in most mature fields in area between U.S. Highways 40 and 50. (Ins. Sur. Bull.). WISCONSIN - Mostly third and fourth instars; some tassel tunneling underway; many tunneling in midribs. Populations generally low, but controls applied to some canning corn. (Wis. Ins. Sur.). MINNESOTA - Egg masses generally light in third of cornfields in southwest, south-central, and west-central districts July 2-8; 8 egg masses per 100 plants highest count. Hatch light in all districts, but should increase this week. Most egg laying on corn 24+ inches high. Egg masses and larvae very difficult to find in southeast and central districts. Moth emergence and egg laying currently continue; counts in all districts low. Heaviest

infestations so far have been 16 infested plants per 100; first instars 1-6 per plant. Egg laying and hatch expected to increase next period. (Minn. Ins. Rpt.). NEBRASKA - First-brood damage evident on one percent of corn plants in 16 fields checked in Dawson County. (Pruess). Less than one percent of plants infested in fields checked in Knox, Seward, and Saline Counties. (Keith). KANSAS - Second to fourth instars 1-3 per plant on 3-8 percent of corn in Brown, Doniphan, and Pottawatomie Counties. (Simpson).

SOUTHWESTERN CORN BORER (*Diatraea grandiosella*) - ILLINOIS - Infested plants ranged 0-52 (average 14) per 1,000 plants in southeast district and 0-52 (average 10) in southwest district. (Ill. Ins. Rpt.). First-generation larvae 10-30 per 1,000 cornstalks in 4 southernmost counties; infestation probably highest ever in State. First-generation pupation begun. Some moth emergence expected within next week. (Ins. Sur. Bull.). ALABAMA - First-generation larvae pupated in some fields in Lawrence, Blount, and other northern counties. Flights heavy in 10-acre field in Lawrence County; first-generation larval damage serious on 25-50 percent of stalks. Some late-developing larvae still feeding. (McClendon et al.).

BLACK CUTWORM (*Agrotis ipsilon*) - ILLINOIS - Hollowed out 10 percent of plants below ground level in cornfield in south-central area. (Ins. Sur. Bull.). WISCONSIN - Cut off 5 percent of corn in field in western Walworth County; all larvae pupated by July 9. Field in corn in 1967. (Wis. Ins. Sur.). OREGON - Spotty in corn at Eugene, Lane County, and Corvallis, Benton County. Pupating. (Crowell).

STALK BORER (*Papaipema nebris*) - ILLINOIS - Causing concern in corn border rows; should disappear soon. (Ins. Sur. Bull.). WISCONSIN - Damage noticeable in margins of corn in Rock and Dane Counties. (Wis. Ins. Sur.). NEBRASKA - Damaged border rows of cornfield near Concord, Dixon County. (Hill).

SORGHUM WEBWORM (*Celama sorghiella*) - TEXAS - Heavy, 2-3 per head, in sorghum field northeast of Groesbeck, Limestone County. Light in fields examined in McLennan, Bell, Falls, Milam, and Robertson Counties. (Green).

CORN ROOTWORMS (*Diabrotica* spp.) - ILLINOIS - *D. longicornis* and *D. virgifera* developing as expected. Pupation begun in northern area; eggs still hatching and young larvae still found. Damage to roots evident in many cornfields and will become progressively worse during July. (Ins. Sur. Bull.). MINNESOTA - Egg hatch slowly progressing July 2-8. Larvae very light; 8 per plant in Wright County highest count. Mostly first instars with few second instars in some fields. Currently still hatching in southern half of State. Development spread out; larvae mostly first but second and third instars found in many fields. Few prepupae in southwest district. Larval counts varied in southeast district. Counts generally low, 0-4 per plant, where corn followed corn in southwest district. Larvae, 0-25 per plant, damaged trace to 75 percent of roots in southeast district. Larvae, 0-15 per plant, damaged (generally low) trace to 10 percent of roots in central district. Infested several fields in Stevens, Swift, and Chippewa Counties (south-central); first instars averaged about 1 per plant. (Minn. Ins. Rpt.). SOUTH DAKOTA - Third and last instars in northern Yankton County; high counts of 67 larvae per plant in untreated field. No pupae noted. Larval development less advanced in cornfields in northern Clay County; mostly second instars. (Jones, Kantack). NEBRASKA - *D. virgifera* and *D. longicornis* damage ranged little to none in most treated fields in Dawson County. Second and third instars up to 20 per plant in one field. No adults observed. (Pruess). One *D. virgifera* adult observed in field near North Platte, Lincoln County. (Hill, Short). *D. virgifera* adults averaged 3.5 per 10 plants in field near Auburn, Nemaha County. (Roselle). Larvae 25-30 per plant in untreated check row in cornfield at experiment station in Dixon County; pupation about 10 percent. No adults observed. (Hill).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - MISSOURI - Adults heavy, 30+ per plant, throughout cornfield in Bates County. Dead and lodged plants resulted from larval feeding earlier. This is most southern economic infestation observed in State. Adults collected in Vernon, Cedar, and Hickory Counties for new county

records. (Munson). KANSAS - Adults 1-2 per plant in most cornfields checked in Brown and Doniphan Counties; 3-7 per plant in Brown County field. (Simpson). OKLAHOMA - Ranged 2-45 per corn plant on 3,800 acres of corn in Texas County; mostly late instars with few pupae and adults. Damage severe where higher counts found. This land treated at planting time. (Okla. Coop. Sur.). COLORADO - Adults and larvae noted on corn in Kit Carson County. (Croissant). WYOMING - Up to full-grown larvae averaged 3 per plant in cornfield near Torrington, Goshen County. (Jones).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - WISCONSIN - Root damage severe in untreated fields. Larval size variable but large percentage nearly full grown. Tunneling within larger corn roots prevalent. Larvae averaged 17 per plant in Columbia and Grant Counties; ranged 0.33-12 per plant where present in plots sampled weekly in Rock and Walworth Counties. (Wis. Ins. Sur.). INDIANA - First adults of season on corn July 8 in Jackson County. (Huber). Pupation first observed July 9 at Lafayette. (Gould).

SOUTHERN CORN ROOTWORM (Diabrotica undecimpunctata howardi) - ILLINOIS - Larvae, pupae, and adults present in some cornfields in southern half of State; larvae tunneled into stalks in some late fields, killing heart of plant. (Ins. Sur. Bull.). ARIZONA - Adults, probably this subspecies, averaged 40 per 100 sweeps in 40-acre sorghum field at Cochise, Cochise County. (Ariz. Coop. Sur.).

CORN FLEA BEETLE (Chaetocnema pulicaria) - MARYLAND - Adults still active on late-planted corn in Frederick County; 50 percent of one corn stand damaged near Ceresville, Frederick County. (U. Md., Ent. Dept.).

FALSE CHINCH BUG (Nysius ericae) - TEXAS - Medium to heavy on grain sorghum in Kinney County; some damage. (Neeb).

LYGUS BUGS (Lygus spp.) - ARIZONA - Averaged 10 per 100 sweeps in sorghum in Maricopa and Pinal Counties. (Ariz. Coop. Sur.).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Spotted with damage to late-planted grain sorghum in Fayette, Washington, and Burleson Counties July 3. Light in McLennan, Falls, and Bell Counties. Medium to heavy in Kinney County; controls in progress. Averaged 4, 1, 3, and 6 per 25 heads in Johnson grass in Lubbock, Lynn, Terry, and Garza Counties. (Neeb et al.).

SLUGS - VERMONT - Damaged corn in several areas; favored by wet weather. (MacCollom). NEW YORK - Serious damage on Yates County field corn due to prolonged wet weather. Some cornfields heavily damaged in Monroe County; some controls applied. (N.Y. Wkly. Rpt., July 8). MICHIGAN - Numerous reports of damage, especially to corn and field beans; much damage probably done during rainy period. (Janes, July 8).

SMALL GRAINS

WHEAT STEM MAGGOT (Meromyza americana) - MINNESOTA - White heads of wheat, oats, and barley very common throughout State. Infestations 2-5 percent (highest counts) in central and west-central districts and 0-1 percent in southwest, south-central, and southeast districts. (Minn. Ins. Rpt., July 8).

TURF, PASTURES, RANGELAND

FALSE CHINCH BUG (Nysius ericae) - COLORADO - Numerous in all areas of Mesa County, especially around grasses in pastures and occasionally around gardens. Mostly nuisance; controls applied in some areas. (Bulla)

A PLANT BUG (Trigonotylus ruficornis) - MISSOURI - Mostly nymphs heavy, 100-420 per 10 sweeps, in redtop in southwest area. (Munson).

A HESPERIID MOTH (Atalopedes campestris) - TEXAS - Heavy, damaging grass in Caldwell and De Witt Counties. (Lindsey, Heideman).

A SNAIL (Zonitoides arboreus) - CALIFORNIA - Heavy on dichondra lawns in Sun City, Riverside County. (Cal. Coop. Rpt.).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - MAINE - Pupating in southern areas. Larvae per plant quite low; most in late instars. Cutting well underway although delayed due to wet conditions earlier in season. (Boulanger, July 5). VERMONT - Problems appear over for 1968 season. (MacCollom). NEW YORK - Spring infestation decreasing in State; control difficult due to unfavorable weather delaying harvest of first crop. Most first-crop alfalfa now cut. Some small larvae found in 6-inch regrowth in Ithaca area, probably from late eggs laid with advent of warm weather. (N.Y. Wkly. Rpt., July 8). MARYLAND - Larvae and adults decreased on alfalfa throughout State. (U. Md., Ent. Dept.). WEST VIRGINIA - Many pupae observed in field. Full-scale emergence yet to occur in northern part of State. (Dorsey, July 3). OHIO - Larvae 1-9 (average 6) per sweep despite rapid declines in Madison, Highland, Clinton, Franklin, Logan, and Union Counties; feeding damage in fields with larger populations. (Rose). Current populations and damage in Wayne, Medina, and Ashland Counties continue to vary with effectiveness of controls; most reports indicate larvae decreasing, few reports of many larvae and much damage. Adults dispersing. (Glass, Thoburn). INDIANA - Larvae ranged from 2 per 5 sweeps to 5 per sweep on second-growth alfalfa in southern and central districts. (Huber). MICHIGAN - Counts minimal in Ottawa, Kent, Ionia, and Clinton Counties. Populations 70-75 percent in cocoon and pupal stage and 25-30 percent second and third instars in 7-county survey; 70 percent of adults newly emerged. Population and adult emergence will continue next 3-4 weeks. (Newman, July 8). MISSOURI - Collected in Polk County for new county record. (Munson). NEBRASKA - Larvae 60 per 100 sweeps in alfalfa field near Gothenburg, Dawson County. (Stevens). NORTH DAKOTA - Larvae up to 850 (average 150) per 100 sweeps in second-crop irrigated alfalfa; adults 1 per 100 sweeps. Tip damage 50 percent in more heavily infested fields. Pupation and light emergence occurred. (Kaatz). WYOMING - Average per 100 sweeps by county: Sweetwater - 33 larvae and no adults; Sublette - 150 larvae and 8 adults; Lincoln - 380 larvae and 41 adults; Uinta - 550 larvae and 24 adults; and Teton - 730 larvae and 57 adults. Teneral adults and pupae present. First cutting about 25 percent complete. (Parshall). OREGON - Larvae, mostly second instar up, 19-20 (averaged 2.4) per sweep in 10 samples (10 sweeps each) July 9 in mature, untreated, very weedy alfalfa field near Canby. Clackamas County. Two old adults taken. Leaf damage 10-20 percent in 90+ percent of plants. (Westcott). WASHINGTON - Light to moderate infestation increased from 1 square mile to 32 square miles near Ellensburg, Kittitas County, July 5. (Klostermeyer). Found at Adna, Lewis County. (Minnick, Pennell, July 5).

CLOVER HEAD WEEVIL (Hypera meles) - MISSOURI - Collected from red clover in Montgomery County by L. R. Hanning for new county record. (Munson).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - OREGON - Adults heavy in white and red clover along a roadside 2.5 miles west of Remote, Coos County. Collected 24 from 10 white clover heads July 1. This is a new county record. (Westcott). MISSOURI - Collected in Ralls and Montgomery Counties by L.R. Hanning for new county records. (Munson).

SPOTTED BLISTER BEETLE (Epicauta maculata) - COLORADO - Adults 150-200 per 100 sweeps in alfalfa in Cheyenne Wells area, Cheyenne County. (Johnson).

PALE-STRIPED FLEA BEETLE (Systema blanda) - COLORADO - Adults 50 per 100 sweeps in alfalfa in Hoyt area, Adams County. (Johnson).

PEA APHID (Acyrtosiphon pisum) - NEVADA - Heavy in alfalfa seed fields at Orovida, Humboldt County, where no treatments applied for about 3 weeks and where treated during recent unfavorable weather. (Hilbig, Lundahl). Increasing, 50-100 per sweep, on alfalfa hay in Mason and Smith Valleys, Lyon County. (Heringer). Averaged 50 per sweep in Jungo, Humboldt County, alfalfa seed fields. (Hilbig). WYOMING - Ranged 25-1,100 per 100 sweeps in State. Adult and nymgal average per 100 sweeps by county: Sweetwater 700; Teton 300; Uinta 150; Lincoln 110; and Sublette 80. (Parshall). COLORADO - Light in most areas; 0-2,300 (average less than 500) per 100 sweeps in alfalfa in southeastern area. (Schweissing). NORTH DAKOTA - Continues high, 50-1,000 (average 530) per 100 sweeps, in second-crop irrigated alfalfa in McKenzie County. Lady beetle larvae up to 150 (average 40) per 100 sweeps in same fields. (Kaatz).

AN APHID (Aphis cracciae) - MAINE - Infestations spotty on vetch in Orono area, Penobscot County, July 1. Heavy on infested plants; winged forms and nymphs with wing pads abundant; indicates more general infestation likely. Colonies examined free of parasites. (Boulanger).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Adults 10-30 per 100 sweeps in red clover in Appomattox, Buckingham, Fluvanna, Albemarle, and Pittsylvania Counties. Appomattox and Buckingham Counties are new county records. (Allen). MISSOURI - Collected by L.R. Hanning in Monroe and Pike Counties for new county records. (Munson).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Average per 100 sweeps in alfalfa by county: Yuma 400; Graham 50; Cochise 40; Pinal and Maricopa 20. (Ariz. Coop. Sur.).

TARNISHED PLANT BUG (Lygus lineolaris) - INDIANA - Nymphs ranged from 3 per 5 sweeps to 3 per sweep on second-growth alfalfa in southern and central districts. (Huber). OHIO - Much increase past 2 periods. Ranged from less than one to 4+ (average 2+) per sweep in Pickaway, Ross, Licking, Madison, Highland, Clinton, Franklin, Logan, and Union Counties. (Rose). VIRGINIA - Adults 20-50 per 100 sweeps in red clover in Appomattox, Buckingham, and Giles Counties. (Allen). DELAWARE - Adults and nymphs 20-30 per 10 sweeps on alfalfa throughout State. (Burbutis).

LYGUS BUGS (Lygus spp.) - KANSAS - Averaged 25-40 per 10 sweeps on northeast area alfalfa and red clover. (Simpson). WYOMING - Adults and nymphs light in western area alfalfa; ranged 16-110 (average 49) per 100 sweeps on alfalfa in Uinta, Lincoln, Teton, Sublette, and Sweetwater Counties. (Parshall). COLORADO - Increased to 50-1,100 per 100 sweeps in alfalfa in Arkansas Valley. (Schweissing). ARIZONA - Counts per 100 sweeps ranged 80-200 in alfalfa in Cochise County and 100-150 in Graham County. (Ariz. Coop. Sur.). NEVADA - Reinfested previously treated alfalfa seed fields at Jungo, Humboldt County; adults and mostly first instars averaged 5 per sweep. (Hilbig).

PLANT BUGS (Adelphocoris spp.) - NEBRASKA - Ranged 10-35 (average 12) per 10 sweeps on alfalfa in Lancaster, Seward, and Saline Counties. (Keith). KANSAS - A. lineolatus averaged 45-60 per 10 sweeps in alfalfa seed field in Brown County. (Simpson).

A FLEAHOPPER (Spanogonicus albofasciatus) - ARIZONA - Averaged 60 per 100 sweeps in alfalfa in San Simon area, Cochise County. (Ariz. Coop. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - MICHIGAN - Last instars pupating in alfalfa; adults increasing with favorable temperatures. Egg laying begun and will continue next 2-3 weeks. (Janes, July 8). NEBRASKA - Averaged about 6 per 10 sweeps on fields checked in Lancaster County. (Keith). COLORADO - Larvae light in alfalfa throughout Arkansas Valley. (Schweissing).

GREEN CLOVERWORM (Plathypena scabra) - NEBRASKA - Larvae per 10 sweeps averaged 8 on alfalfa in Lancaster County and ranged 0-3 in Seward and Saline Counties. (Keith). KANSAS - Ranged 5-15 per 10 sweeps on northeast area alfalfa. (Simpson).

VARIEGATED CUTWORM (Peridroma saucia) - NEBRASKA - Second to fourth instars light, less than 1 per 10 sweeps, on alfalfa in Lancaster County. (Keith).

WESTERN FLOWER THRIPS (Frankliniella occidentalis) - ARIZONA - Averaged 600 per 100 sweeps in 40-acre field at San Simon, Cochise County. (Ariz. Coop. Sur.).

SPIDER MITES (Tetranychus spp.) - ARIZONA - Heavy in several alfalfa seed fields at Yuma, Yuma County; treatments applied. (McHenry). NEVADA - Tetranychus sp. heavy in dry areas of alfalfa seed fields at Oroville, Humboldt County. Leaf damage easily seen. Treatments applied. (Lundahl).

SOYBEANS

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Some controls applied to fields where damage extreme in Madison County. This unusual for northern area, due to heavy overwintering of adults from 1967. Light in Talladega County. (Magnusson et al.). TENNESSEE - Damage only light in most central area fields. (Quillin). VIRGINIA - Adults rare; late instars about ready to pupate in Nansemond County. (Smith). MARYLAND - Larvae and adults still active on soybeans throughout State; damage generally light. (U. Md., Ent. Dept.).

BEAN LEAF BEETLE (Cerotoma trifurcata) - MARYLAND - Remains light on Eastern Shore; light to medium in southern area. Defoliation 15 percent in 15-acre field in Patuxent, Charles County; adults 2-4 per 3 row feet. (U. Md., Ent. Dept.). ILLINOIS - Noneconomic in southern area. (Ins. Sur. Bull.). MINNESOTA - Light margin feeding in Scott, Sibley, Brown, and McLeod Counties. (Minn. Ins. Rpt.).

ALFALFA WEEVIL (Hypera postica) - OHIO - Adults destroyed one acre of soybeans in Delaware County and infested soybeans in Marion County. (Jones).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - ALABAMA - Larvae heavy, destroyed stand in 100-acre field of young soybeans at Opp, Covington County. Soil treatment to be applied and area replanted. Stands destroyed 2 and 3 times in several fields near St. Elmo, Mobile County. (Pike et al.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ALABAMA - Previous girdling caused some plants to fall in most fields in State. (McQueen).

COTTON

BOLL WEEVIL (Anthonomus grandis) - SOUTH CAROLINA - Some first-generation weevils noted at Florence. Generally light for time of year; heavy in some untreated fields. Adults 0-1.5 per 100 squares in treated plots; none in untreated plots. Total of 12 adults on 9 groups of 10 potted plants; total to date 33. Two adults taken in male attractant traps; total to date 2,804. Percent larval infestations ranged 0.1-6.1 in treated plots and 0-2.5 in untreated plots. (Taft et al., July 5). GEORGIA - Percent punctured squares 0, 2, and 4 in 3 Colquitt County fields; 0, 1, and 2 in 3 Turner County fields; 3 and 4 in 2 Worth County fields; 0, 6, and 8 in 3 Tift County fields. (Womack, July 6). ALABAMA - Continues high throughout southern and central areas; controls general. Punctured squares gradually increased in northern area, but much lighter than 1967. Punctured squares up to 45 percent in some isolated fields, mostly 2-15 percent. Controls begun in some fields in northern area. (McQueen). MISSISSIPPI - Punctured squares averaged 2-3 percent in fields checked in Yazoo County week ending July 5; newly emerged first-generation weevil observed. General emergence expected. Remained light throughout State week ending July 12. Numbers higher

in hill section than in delta area. First-generation emergence continues in south delta region; several fields treated. Average percent infestation by county: Pike, 15 in 10 fields; Hinds, 4 in 7; Issaquena, 1 in 30; Washington, 5 in 6; Attala, 5 in 15; Chickasaw, 10 in 8; Sharkey, 1 in 40; Holmes, 8 in 10; Jefferson Davis, 6 in 75; Yazoo 4 in 15 fields. (Dinkins). Punctured squares in 7 of 22 fields in delta counties; percent infestation averaged 2.6 (maximum 14.0) in these 7 fields. (Pfrimmer et al.). LOUISIANA - Square infestations ranged 1-18 percent (average 7.6) in 131 of 135 fields checked in Madison Parish week ending July 4. No weevils found in 59 fields checked by row-foot method. Nine weevils collected in 36 sex attractant cage traps and 8 in 10 winged traps. One weevil collected from 100 potted cotton plants. Total of 2,487 to date. Percent square infestations in 112 fields in Madison Parish averaged 6.1 and ranged 2.0-24.0 week ending July 11. One weevil found in 27 young fields checked by row-foot method. Recovered 7 weevils from caged traps, 6 from winged traps, and 4 from 100 potted plants in male attractant test. (Cleveland et al.). ARKANSAS - Infested 1,213 (18.7 percent) of fields scouted. Above treatment level in 15 fields. (Boyer et al.). TEXAS - Infestation increased over that of previous period in McLennan and Falls Counties. Percent punctured squares 0.5-9.7 (average 4) in 14 treated fields and 0.9-20.8 (average 12.9) in 17 untreated fields. No weevils taken in male attractant traps. (Cowan et al.). For Boll Weevil in High Plains see page 679. OKLAHOMA - Remains light over southwest growing area. Larvae less than 1 percent in cotton in Jackson County. (Okla. Coop. Sur.).

BOLLWORMS (*Heliothis* spp.) - SOUTH CAROLINA - Percent larval infestations ranged 0-0.75 in treated plots and 0-1.0 in untreated plots at Florence. No *H. virescens*, but 97 *H. zea* adults taken in light trap during period; total to date 308 *H. zea* and 4 *H. virescens*. (Taft et al., July 5). GEORGIA - *H. zea* eggs and larvae per 100 terminals by county: Colquitt - eggs 4 and 10, larvae zero in 2 fields; Turner - eggs 8 and 10, larvae 0 and 1 in 2 fields; Worth - eggs 0 and 4, larvae zero in 2 fields; Tift - eggs 0, 6, and 10, larvae 0, 4, and 2 in 3 fields. (Womack, July 6). ALABAMA - Heavy in numerous isolated fields in several southern and central counties; controls difficult. (McQueen). MISSISSIPPI - *H. zea* and *H. virescens* remain generally light in south delta area week ending July 5; second and third instars averaged 1-2 per 100 terminals in most fields. Very few eggs noted indicates infestation will not increase. *H. zea* and *H. virescens* remained low week ending July 12; mostly second and third instars. Egg counts (very low) 1 percent or less in most fields. Average percent larval infestation by county: Issaquena, 2 in 30 fields; Washington, 1 in 6; Attala, 3 in 15; Sharkey, 4 in 40; Holmes, 1 in 10; Jefferson Davis, 2 in 75 fields. (Dinkins). *H. zea* damaged squares in 18 of 22 fields in delta counties; percent infestation averaged 1.5 (maximum 3.0). Eggs and larvae very few. Moth flight very low but expected to increase in next 7-10 days. (Pfrimmer et al.). LOUISIANA - *H. zea* larvae ranged 1-3 (average 1.3) per 100 squares in 19 of 135 fields examined in Madison Parish week ending July 4; percent damaged squares ranged 1-10 (average 3.8) in 109 fields; no damage found in 26 fields. Eggs ranged 1-5 (average 1.7) per 100 terminals in 49 of 117 fields checked; larvae ranged 1-6 (average 2.1) per 100 terminals in 37 fields. *H. zea* infested 84 of 112 fields in Madison Parish week ending July 11; percent infestation averaged 1.7 and ranged 1.0-5.0. Eggs and larvae very light in terminal counts of 138 fields. (Cleveland et al.). ARKANSAS - Eggs, larvae, and/or both found in 1,757 fields. Percent damaged squares averaged less than 1 in 331 fields, 1-2 in 414 fields, 2-5 in 195 fields, 5-8 in 31 fields, 8+ in 1 field; no damaged squares found in 5,500 fields. Number of moths on sugar lines very low. (Boyer et al.). TEXAS - Remain light in McLennan and Falls Counties. Eggs ranged 0.3-3.3 (average 1.4) and larvae 0-3.3 (average 0.8) per 100 terminals in 20 treated fields; eggs 0-5 (average 2.2) and larvae 0-3.3 (average 1.3) per 100 terminals in 11 untreated fields. Percent damaged squares ranged 0.3-4.0 (average 1.1) in 14 treated fields and 0.2-5.0 (average 2.6) in 17 untreated fields. Total of 28 larvae determined *H. virescens* and 19 *H. zea* of 47 larvae collected previously on cotton. (Cowan et al.). In High Plains area, light in Gaines, Mitchell, and Yoakum Counties. (Almand, July 9). ARIZONA - *H. zea* first instars averaged about 3 per 100 plants in Safford, Graham County. (Ariz. Coop. Sur.).

CABBAGE LOOPER (*Trichoplusia ni*) - SOUTH CAROLINA - Total of 7 adults taken in light trap at Florence; total to date 25. (Taft et al., July 5).

BEET ARMYWORM (*Spodoptera exigua*) - NEW MEXICO - Continues light on cotton in Chaves and Eddy Counties. (Mathews et al.).

TARNISHED PLANT BUG (*Lygus lineolaris*) - MISSISSIPPI - Mostly nymphs moderate, 15 per 100 terminals, in Yazoo County. (Dinkins, July 5). Averaged 1.45 (maximum 5) per 100 terminals in 12 of 24 fields in delta counties. (Pfrimmer et al.). LOUISIANA - Ranged 3-18 (average 9.9) per 100 sweeps in 18 of 19 fields examined in Madison Parish week ending July 4 and 1-18 (average 6) per 100 sweeps in 24 of 26 fields week ending July 11. Averaged 7 per 100 sweeps in grass and weeds at 19 locations. (Cleveland et al.).

LYGUS BUGS (*Lygus* spp.) - ARIZONA - Counts per 100 sweeps averaged 20 at Casa Grande, San Simon, and Salt River Valley and 10 in Stewart District and Safford area. (Ariz. Coop. Sur.).

COTTON FLEAHOPPER (*Psallus seriatus*) - MISSISSIPPI - Averaged 5-6 per 100 terminals in Yazoo County. (Dinkins, July 5). TEXAS - Light in Gaines, Hale, Lamb, Lubbock, Lynn, Martin, and Yoakum Counties; ranged 5-25 per 100 terminals in Mitchell County. (Almand, July 9). Infestation decreased over that of previous period in McLennan and Falls Counties. Counts per 100 terminals averaged 10.4 (maximum 20.3) in 20 treated fields and 13.4 (maximum 30.3) in 11 untreated fields. (Cowan et al.).

FLEAHOPPERS - LOUISIANA - Counts per 100 sweeps averaged 1.3 in 4 of 19 fields week ending July 4 and one in 2 fields week ending July 11 in Madison Parish. (Cleveland et al.). ARIZONA - *Spanogonicus albofasciatus* per 100 sweeps averaged 20 at San Simon (Kozloski) and 10 in Stewart District, Cochise County (Ariz. Coop. Sur.).

SAY STINK BUG (*Pitidia sayi*) - ARIZONA - Counts per 100 sweeps averaged 7 in 75-acre field at Safford, Graham County, and 10 at San Simon, Cochise County. (Ariz. Coop. Sur.).

COTTON APHID (*Aphis gossypii*) - OKLAHOMA - Averaged 10 per plant in 6-leaf cotton field in Jefferson County. (Okla. Coop. Sur.).

THRIPS - TEXAS - Remain generally light in Gaines, Hale, Lubbock, Martin, Mitchell, Terry, and Yoakum Counties; light to medium in Swisher, Lamb, and Floyd Counties. (Almand, July 9). ARIZONA - *Frankliniella occidentalis* light, 2 per 100 new leaves, at Marana, Pima County. (Ariz. Coop. Sur.).

SPIDER MITES (*Tetranychus* spp.) - ARIZONA - Becoming problem in many fields at Yuma and Parker, Yuma County. (McHenry). Infested one field at Queen Creek, Maricopa County. (Ariz. Coop. Sur.). MISSISSIPPI - *T. urticae* light in 1 field, medium in one, and heavy in another in delta counties. (Pfrimmer et al.). ALABAMA - *T. urticae* increased in several fields in Colbert, Lawrence, and other northern counties past 2 weeks. (McQueen).

TOBACCO

FLEA BEETLES - INDIANA - *Epitrix hirtipennis* adults ranged 1-7 per leaf on 12 to 18-inch tobacco in southern districts. (Huber). TENNESSEE - Damage light in most central area fields; adults 30-60 per 100 plants. (Quillin).

SPOTTED CUCUMBER BEETLE (*Diabrotica undecimpunctata howardi*) - MARYLAND - Damage light to 0.5-acre of tobacco near Largo, Prince Georges County. (U. Md., Ent. Dept.).

HORNWORMS - TENNESSEE - Damage to unsprayed fields moderate. Feeding injury apparent on 20-25 percent of plants in one field. (Quillin).

SUGARBEETS

SUGAR-BEET ROOT MAGGOT (Tetanops myopaeformis) - NORTH DAKOTA - Larvae caused light damage to sugarbeets near Amenia, Cass County. This is first known economic infestation in county. Pest normally only problem in Walsh and Pembina Counties. (Dogger).

BEET WEBWORM (Loxostege sticticalis) - COLORADO - Adult flights decreased in Arkansas Valley; 0-15 per 100 sweeps. (Schweissing). WYOMING - Larvae averaged 1 per 100 sweeps in Park County. (Parshall).

PALE-STRIPED FLEA BEETLE (Systema blanda) - WYOMING - Heavy in one field near Worland, Washakie County. (Lowry).

LYGUS BUGS (Lygus spp.) - WYOMING - Adults averaged 7 per 100 sweeps in Park County. (Parshall).

MISCELLANEOUS FIELD CROPS

SUNFLOWER MOTH (Homoeosoma electellum) - CALIFORNIA - Larvae medium in safflower plantings in Westmorland, Imperial County. (Cal. Coop. Rpt.). NORTH DAKOTA - Adults of this species and Phalonia hospes active in sunflower fields in Grand Forks and Traill Counties. (Brandvik).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - MAINE - Small numbers on potato foliage in Bridgewater district; reported in other districts. (Shands et al.). RHODE ISLAND - Late instars common in unsprayed potato fields July 9. (Field). MARYLAND - Defoliation and damage light to medium to set tomatoes on untreated plants on lower Eastern Shore. (U. Md., Ent. Dept.). WYOMING - Heavy on garden potatoes at Powell, Park County; none in treated potato fields. (Parshall).

EUROPEAN CORN BORER (Ostrinia nubilalis) - DELAWARE - Pupation heavy in peppers in southwest Sussex County; adults emerging in eastern area of county. (Boys, July 11).

TOMATO FRUITWORM (Heliothis zea) - ALABAMA - Light to medium in several commercial fields in St. Clair and Blount Counties. (Jackson et al.). ARKANSAS - Declined on tomatoes in Lincoln County. (Daniel). Very light on tomatoes in Crawford County. (Roberts). ILLINOIS - Common in tomato patches in southern half of State. (Ins. Sur. Bull.).

HORNWORMS (Manduca spp.) - NEVADA - Larvae increasing on 20 acres of greenhouse tomatoes at Las Vegas, Clark County. (Zoller).

Potato Aphids in Maine - Macrosiphum euphorbiae slightly more abundant on untreated potatoes in all districts than Aphis nasturtii; Acyrtosiphon solani present in small numbers. Myzus persicae trace at Presque Isle; larger numbers found in early planted field at Houlton; none found in Lee district. All species averaged 0.3 per plant at Presque Isle with 15 percent of plants infested; this about double counts and percent infestation of previous week. Aphid numbers and rate of increase generally higher in Houlton and Lee districts. (Shands et al.).

GREEN PEACH APHID (Myzus persicae) - NEW JERSEY - Heavy populations damaged egg-plant near Trenton. (Ins.-Dis. Newsltr.). RHODE ISLAND - Heavy; building up in unsprayed potato fields July 10. (Kerr, Field).

POTATO APHID (Macrosiphum euphorbiae) - RHODE ISLAND - Heavy; building up in unsprayed potato fields July 10. (Kerr, Field).

FALSE CHINCH BUG (Nysius ericae) - COLORADO - Ranged 50-800 per 100 sweeps on potatoes in Otero County; no problem in most fields. (Schweissing).

BEANS AND PEAS

PALE-STRIPED FLEA BEETLE (Systema blanda) - COLORADO - Adults damaged beans in Cheyenne Wells area, Cheyenne County, and Sedgwick area, Sedgwick County; ranged 10-20 per 100 sweeps. (Johnson). WYOMING - Adults heavy and damaging beans near Douglas, Converse County. (Nicholls).

MEXICAN BEAN BEETLE (Epilachna varivestis) - NEW YORK - Adults numerous in some fields and scarce in others in Monroe County. (N.Y. Wkly. Rpt., July 8). RHODE ISLAND - Adults active in some fields July 2. (Field). DELAWARE - Increasing on beans in home gardens and some commercial fields. (Boys, July 11). WEST VIRGINIA - Larvae light, 1 per 10-15 plants, in Monongalia County. (Dorsey, July 5). MICHIGAN - Egg hatch begun in State. (Wells, July 8). COLORADO - Adults 0-1 per 20 plants in some bean fields in Crowley, Otero, and Pueblo Counties. (Schweissing).

COWPEA CURCULIO (Chalcodermus aeneus) - GEORGIA - Moderate on peas in Tift County. (Womack, July 6).

COLE CROPS

DIAMONDBACK MOTH (Plutella xylostella) - NEW YORK - Active in few cabbage fields in Ontario and Yates Counties; larvae heavy in some cabbage in Orleans, Genesee and Niagara Counties. (N.Y. Wkly. Rpt., July 8).

CABBAGE LOOPER (Trichoplusia ni) - CALIFORNIA - Larvae medium on cabbage in Red Bluff, Tehama County. (Cal. Coop. Rpt.). NEW JERSEY - First larvae of year causing light injury to cabbage field near Lumberton. (Ins.-Dis. Newsltr.).

BLACK CUTWORM (Agrotis ipsilon) - OREGON - Spotty in turnips at Eugene, Lane County, and Corvallis, Benton County. Pupating. (Crowell).

IMPORTED CABBAGEWORM (Pieris rapae) - WEST VIRGINIA - Larvae ranged 2-3 per cabbage plant in Monongalia County. (Dorsey, July 3). VIRGINIA - Large larvae causing severe damage to kale and tops of rutabagas in Montgomery County. (Allen, July 6).

HARLEQUIN BUG (Murgantia histrionica) - COLORADO - Adults heavy, 30-40 per plant, in radish fields in Wray area, Yuma County. (Johnson).

WESTERN POTATO FLEA BEETLE (Epitrix subcrinita) - COLORADO - Adult damage heavy in radish fields in Wray area, Yuma County; ranged 400-500 per plant. (Johnson).

CUCURBITS

SQUASH BUG (Anasa tristis) - CALIFORNIA - Medium on squash vines in Gerber, Tehama County. (Cal. Coop. Rpt.). NEW MEXICO - Adults and nymphs abundant on squash and related plants in Albuquerque area, Bernalillo County, and Las Cruces area, Dona Ana County. Control difficult. (Heninger, Nielsen). ARKANSAS - Averaged one per 10-15 squash plants in Crawford County; eggs increased. (Roberts). MARYLAND - Adults active on garden squash in Greenbelt, Prince Georges County. (U. Md., Ent. Dept.).

SEED-CORN MAGGOT (Hylemya platura) - WISCONSIN - Severely damaged cantaloup planting near Omro, Winnebago County. (Wis. Ins. Sur.).

GENERAL VEGETABLES

BLACK CUTWORM (Agrotis ipsilon) - OREGON - Spotty on carrot and beet at Eugene, Lane County, and at Corvallis, Benton County. Pupating. (Crowell).

CELERY LOOPER (Anagrapha falcifera) - MICHIGAN - Adults decreased in light traps in Montcalm County; flight evident past 6 weeks throughout State. (Newman, July 8).

THRIPS (Thrips spp.) - COLORADO - Ranged 0-100 per plant on onions throughout Arkansas Valley; damage in heavily infested fields. (Schweissing). T. tabaci 3-4 per plant on onions at Hoyt, Adams County; ranged 10-20 per 100 sweeps. (Johnson).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Carpocapsa pomonella) - CALIFORNIA - Larvae medium in apple fruit at Corning, Tehama County. (Cal. Coop. Rpt.). COLORADO - Second brood taken in sex attractant traps with heavy flight July 6-8 in Mesa County. Up to 40 moths taken in one trap in 3-day period. Lighter in most sprayed commercial orchards. (Bulla). MISSOURI - Moderate on northeast area apples; light to severe in unsprayed central area orchards. (Wkly. Rpt. Fr. Grs., July 9). INDIANA - Pre-pupae continue to leave apples at Vincennes. Second adult flight continues as 79 males taken in virgin female traps in one orchard compared with 89 previous period. First eggs of this brood probably hatched. (Dolphin, July 8). DELAWARE - Entries in one apple orchard. (Boys, July 11). MAINE - Hatched July 6-7. Adults scarce, egg deposition low. High evening temperatures past few days will increase activity. (Boulanger).

ORIENTAL FRUIT MOTH (Grapholitha molesta) - WASHINGTON - Total of 60 percent of second-brood larvae full grown in peach terminals July 2 at Parker Heights, Yakima County. (Johnson). TEXAS - Larvae caused much damage to Nacogdoches County peach. (Evans).

PEACH TWIG BORER (Anarsia lineatella) - WASHINGTON - Nearly all first summer-generation larvae full grown in peach and prune in lower Yakima Valley, Yakima County. (Johnson, July 5). CALIFORNIA - Larvae medium in peach fruit at Lakeside, San Diego County. Infestations caused heavy culling in most peach areas this spring. (Cal. Coop. Rpt.).

RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) - INDIANA - Adult flights continue to decrease at Vincennes; 100 males taken in sex lure traps compared with 292-2,399 of previous 3 periods. (Dolphin, July 8).

APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - Adults emerged at Minneapolis and St. Paul. (Minn. Ins. Rpt.). INDIANA - Adult captures (505) continue to increase in abandoned early variety apple orchard at Vincennes. Extensive larval damage expected in abandoned orchards, but not in commercial orchards. (Dolphin, July 8). CONNECTICUT - Emergence increased greatly at Storrs; 124 adults on false apple lures compared with 18 previous period. Emergence should peak next few days. (Savos, July 9). NEW YORK - Emerged in Brockport and Hilton July 1 and in Hamlin July 7 from seeded cages. (N.Y. Wkly. Rpt.). VERMONT - First adult collected July 11 on false apple lures. (MacCollom). MAINE - Females on baited stickyboards at Monmouth July 3; no cage emergence July 5. (Boulanger).

TEPHRITID FLIES (Rhagoletis spp.) - MICHIGAN - Larval infestations more numerous than in 1967. Positive in 46 tart cherry and 2 sweet cherry samples from 26 Berrien County properties. Infestations few (2 positive tests) in Kent, Ottawa, and Allegan Counties June 29-July 5. (Hanna).

PLUM CURCULIO (Conotrachelus nenuphar) - INDIANA - Egg laying and feeding scars extensive (7.4-19.0 percent) on unsprayed apple fruit at 2 Vincennes orchards;

larvae feeding in apples on ground in unsprayed orchard. (Dolphin, July 8).
CONNECTICUT - Adult collected on false apple lure July 9, latest ever according to observer. (Savos).

SHOT-HOLE BORER (Scolytus rugulosus) - CALIFORNIA - Adults heavy in cherry and apple trees at Rio Vista, Solano County. (Cal. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - COLORADO - Abundant, 1-16 per leaf, in apple orchards at Eckert and Rogers Mesa in Delta County; controls applied. (Bulla).
MISSOURI - Moderate on apple and peach in southeast area and on apple in central area. (Wkly. Rpt. Fr. Grs., July 9). INDIANA - Numbers vary in commercial orchards relative to effectiveness of controls at Vincennes. Adults averaged 0, immatures 0.71, and eggs 0.61 per leaf in treated apple orchard compared with 3.54 adults, 12.49 immatures, and 31.18 eggs per leaf in nearby unsprayed block. (Dolphin, July 8). MICHIGAN - More evident on apple, prune, and peach than few weeks ago. (Newman, July 8). DELAWARE - Increasing in several apple orchards. (Boys, July 11). MAINE - Second summer-generation adults becoming numerous; eggs will be numerous soon. (Boulanger).

SPIDER MITES (Tetranychus spp.) - MISSOURI - Moderate on southeast area apple and peach. (Wkly. Rpt. Fr. Grs., July 9). COLORADO - T. urticae increasing to 0-10 per leaf on cover crops in apple and pear orchards in Mesa County; controls needed. (Bulla).

PEAR RUST MITE (Epitrimerus pyri) - COLORADO - Up to 50-100 per leaf damaged few pear orchards in Mesa County, mostly where buildup allowed previous year; russeted fruit in heavily infested areas. (Bulla).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Young pecan nuts beginning to fall from first infestations of year in Bullock and other southern counties. (Bagby et al.).

PECAN NUT CASEBEARER (Acrobasis caryae) - NEW MEXICO - Two infested nuts found in pecan orchard near Chaves by Eddy County line. No damaged nuts found in pecan orchards checked between Eddy County line and Roswell, Chaves County. (Mathews et al.).

WALNUT CATERPILLAR (Datana integerrima) - OKLAHOMA - Averaged 2 webs per tree on 50 pecan trees in Tulsa County. (Okla. Coop. Sur.).

FILBERTWORM (Melissopus latiferreanus) - OREGON - First adults in light trap July 9 in filbert orchard near Eugene, Lane County. (Tinker).

PECAN LEAF PHYLLOXERA (Phylloxera notabilis) - OKLAHOMA - Heavy on Ottawa County pecan trees. (Okla. Coop. Sur.).

APHIDS - CALIFORNIA - Monellia caryella nymphs and adults heavy on pecan trees at Kelseyville, Lake County. (Cal. Coop. Rpt.). GEORGIA - Yellow and black forms light to moderate on Tift County pecans. (French, July 6).

CITRUS

Citrus Insect Situation in Florida - End of June - CITRUS RUST MITE (Phyllocoptruta oleivora) infested leaves in 63 percent of groves (norm 49 percent); 41 percent economic (norm 27 percent). Infested fruit in 54 percent of groves (norm 48 percent); 38 percent economic (norm 26 percent). Decreased but still above normal and in high range. Little change expected. Highest districts west, south, and central. TEXAS CITRUS MITE (Eutetranychus banksi) infested 81 percent of groves (norm 76 percent); 48 percent economic (norm 57 percent). Appears to have reached summer peak

slightly below normal high level for June. Decrease expected by end of July. Scattered heavy infestations will occur. Highest districts central, south, and west. CITRUS RED MITE (Panonychus citri) infested 61 percent of groves (norm 69 percent); 28 percent economic (norm 45 percent). Lowest for June in 17 years of record. Nearing summer peak of abundance but still at moderate level. Expected to decrease after mid-July. Very few infestations will be important. Highest districts north and west. BLACK SCALE (Saissetia oleae) infested 93 percent of groves (norm 81 percent); 79 percent economic (norm 59 percent). Sharply increased to highest June level in 17 years. Additional increase expected in July, followed by decrease in August. All districts high. GLOVER SCALE (Lepidosaphes gloverii) infested 87 percent of groves (norm 85 percent); 21 percent economic (norm 35 percent). Below normal but in high range and expected to remain high until August. Highest districts south and east. PURPLE SCALE (L. beckii) infested 60 percent of groves (norm 82 percent); none economic (norm 15 percent). Lowest ever recorded for June; will remain near this level. Highest district west. CHAFF SCALE (Parlatoria pergandii) infested 50 percent of groves (norm 78 percent); 2 percent economic (norm 20 percent). Lowest June level in 17 years of record. Little change expected. Highest district east. YELLOW SCALE (Aonidiella citrina) infested 69 percent of groves (norm 70 percent); 3 percent economic (norm 14 percent). Below normal; will remain in low to moderate range in most districts. Highest district west. An ARMORED SCALE (Unaspis citri) in more groves (16 percent) than last June (12 percent) but infestations lighter. WHITEFLIES reached normal high level for June; will decrease. MEALYBUGS entered high range, will remain near normal high level through July. Few scattered infestations will be important. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

WESTERN GRAPE LEAF SKELETONIZER (Harrisina brillians) - NEVADA - Second-generation adults laying eggs at Las Vegas, Clark County. (Zoller).

STRAWBERRY CROWN MINER (Aristotelia fragariae) - CALIFORNIA - Larvae medium on strawberry plants at Portola, Plumas County. (Cal. Coop. Rpt.).

RASPBERRY CANE BORER (Oberea bimaculata) - WISCONSIN - Girdled tips of raspberry plants wilting at Dane County location. (Wis. Ins. Sur.). MINNESOTA - Numerous in some home raspberry plantings at Rochester. (Minn. Ins. Rpt.).

GRAPE PHYLLOXERA (Phylloxera vitifoliae) - ARIZONA - Galls heavy on foliage; all stages on grapes at Cherry, Yavapai County. (Carver). Det. by D. Tuttle. (Ariz. Coop. Sur.).

BLUEBERRY THRIPS (Frankliniella vaccinii) - MAINE - Hatch reaching peak at Sedgwick, Hancock County; earliest nymphs nearly full grown. (Boulanger, July 5).

BLUEBERRY MAGGOT (Rhagoletis mendax) - MAINE - Emergence began June 29; increasing slowly. Numbers low to date. (Boulanger).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - Infestations continue in Alabama, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas. Seasonal increases expected in most areas; already increased on Bankhead National Forest in Alabama and on private lands in eastern Texas. Salvage program in 4-county area of northeastern Georgia reduced infestations. (South. For. Pest Rptr., June). TENNESSEE - Scattered active spots in Loudon County; about 5 spots near Loudon. (Applegate).

NORTHERN PINE WEEVIL (Pissodes approximatus) - OHIO - New adults of 1968 generation on Scotch and white pine Christmas trees in Lake County. (Rose).

JACK-PINE BUDWORM (Choristoneura pinus) - WISCONSIN - Browning of jack pine severe on 5,000-10,000 acres in northwestern Juneau County. (Wis. Ins. Sur.). MINNESOTA - About 15-20 percent of last instars in pupal stage in east-central areas and 25-30 percent in north-central areas. (Minn. Ins. Rpt.).

YELLOW-HEADED SPRUCE SAWFLY (Pikonema alaskensis) - MINNESOTA - Defoliated white spruce in northern area July 8; many reports of damage to roadside and plantation white spruce from all northern areas. Last instars at present consuming much foliage. (Minn. Ins. Rpt.).

LARCH SAWFLY (Pristiphora erichsonii) - VERMONT - Up to full-grown larvae on European larch in Washington County. (MacCollom). WEST VIRGINIA - Damage moderate on ornamental larch in Arbovale. Det. by A. Cole. (Wenger, July 5). MINNESOTA - Larvae very common again in 1968; first to middle instars in north-central area. Severe tamarack defoliation expected in most areas. (Minn. Ins. Rpt., July 8).

ADELGIDS (Adelges spp.) - MICHIGAN - A. cooleyi eggs of overwintering forms laid. Hatched in southern Lower Peninsula; complete hatch expected in 7 days further north in Charlevoix County. (Wallner, July 8). MINNESOTA - A. abietis in some white spruce nursery plantings; some galls drying up. (Minn. Ins. Rpt., July 8).

PINE TORTOISE SCALE (Toumeyella numismaticum) - MINNESOTA - Hatching in east-central area since July 2; populations not heavy. (Minn. Ins. Rpt.).

SARATOGA SPITTLEBUG (Aphrophora saratogensis) - WISCONSIN - Adults emerged near Warrens, Monroe County. (Wis. Ins. Sur.).

ELM LEAF BEETLE (Pyrrhalta luteola) - GEORGIA - Heavily damaged elm foliage in Gwinnett County. (Baughman, July 6). OKLAHOMA - Adults feeding and laying eggs; hatch light with second-generation larvae feeding. (Okla. Coop. Sur.). KANSAS - First-generation adults laying eggs in many areas. (Brooks). NEBRASKA - First-generation adults emerging in Nemaha County; emergence about 10 percent complete. Foliar damage 50-60 percent on American and Siberian elms at Auburn. (Roselle). DELAWARE - Larvae damaged elm leaves in several areas. (Boys, July 11). NEW JERSEY - Larvae active in central counties. (Ins.-Dis. Newsltr.).

ALDER FLEA BEETLE (Altica ambiens) - OREGON - Severely skeletonized 50 percent of alders along coast between Florence, Lane County, and Newport, Lincoln County. (Larson).

BARK BEETLES - NEVADA - Many Scolytus multistriatus adults fed in axils of elms, caused severe bleeding at Las Vegas, Clark County. (Zoller). CALIFORNIA - Pseudopityophthorus pubipennis adults heavy in white oak trees at Atherton, San Mateo County. (Cal. Coop. Rpt.).

LONG-HORNED BEETLES - OHIO - Goes tigrinus adults began emergence; first observed in Scioto Trail State Forest in Ross County June 23. (Donley et al.). Romaleum rufulum larval damage to red, black, and scarlet oaks especially prominent this year in same area. Total of 39 attacks counted on 8-inch diameter tree; other trees in area averaged 10 attacks each. (Hay).

FOREST TENT CATERPILLAR (Malacosoma disstria) - MICHIGAN - Heavy defoliation over for 1968 in Antrim, Charlevoix, and Kalkaska Counties. Almost all larvae pupated. (Wallner, July 8). MINNESOTA - Pupae 65 percent parasitized in area west of International Falls. (Minn. Ins. Rpt.).

LETTUCE ROOT APHID (Pemphigus bursarius) - NORTH CAROLINA - Collected on Lombardy poplar at Zebulon, Wake County, July 2, 1968, by F. Whitfield. Det. by C.F. Smith. This is a new State record. (Weekman).

MAN AND ANIMALS

MOSQUITOES - MAINE - Generally more troublesome than for several years in most areas; however, dry weather limited numbers in northern portion of State. Mansonia perturbans adults first appeared in Orono area, Penobscot County, July 1; expected to increase until mid-July. Entering homes and camps. (Boulanger, July 5).
MICHIGAN - Many Aedes spp. and Culex spp. continue heavy in many areas. (Newman, July 8).
WISCONSIN - Populations high in most areas; biting severe on warm evenings. Large adult emergence expected from flood pools as result of rains 2 weeks ago. (Wis. Ins. Sur.).
MINNESOTA - Aedes vexans present in 593 samples and Culex restuans in 566 of 1,374 larval samples taken week ending June 29 in Metropolitan Mosquito Control District. Total of 10,766 females taken in light traps; 9,832 were A. vexans. This species also predominant in day and evening bite collections. Mosquitoes reached alltime seasonal high week ending July 6, as predicted; most mosquitoes 7-10 days old. Significant decreases expected next 7 days. A. vexans predominant. Mansonia perturbans emergence begun; adults will probably reach peak July 15 or 20. (Minn. Ins. Rpt.).
WYOMING - Adults numerous and annoying in meadow areas of Teton, Sublette, Carbon, and Lincoln Counties. (Parshall).
RHODE ISLAND - Prevalent throughout State July 9. (Field).
TEXAS - Mosquitoes during June in Jefferson County as follows: C. pipiens quinquefasciatus increased considerably during first part of month, but significantly decreased since 8-day rain. C. salinarius common in southern part of county; reached total of 900 on night of June 24 in Pleasure Island light trap. Aedes sollicitans reached epidemic level near end of month; common as far north as south Beaumont. A. taeniorhynchus appeared latter part of month. A. vexans in more northern parts of county. Psorophora ciliata numerous and annoying. P. confinnis very heavy; adults taken in salt marsh areas; 860 adults in light trap June 3 - highest collection. Mansonia perturbans continued to occur and appeared on Pleasure Island; still common in Beaumont area. Uranotaenia sp. taken on Pleasure Island and in both Beaumont traps; genus most numerous in salt marsh areas. (Jefferson Co. Control Dist.).

SCREW-WORM (Cochliomyia hominivorax) - Continued to spread in Texas, New Mexico, Arizona, and California. Officials have urged all livestockmen in epidemic area to hold off surgical operations on animals and to immediately treat all wounds to halt spread of the pest. Emergency inspection stations at State borders may be necessary to prevent illegal movement of infested livestock from State to State. Currently, officials warn of possibility of carrying the pest into neighboring States such as Louisiana, Mississippi, Arkansas, and southern Oklahoma. This would reestablish a screw-worm population in States that have been free of this pest for many years. As of July 15, a total of 1,149 cases has been reported in the 4 States (the bulk in Texas), the highest case count since 1963. (Anim. Health. Div.).

HORN FLY (Haematobia irritans) - **WEST VIRGINIA** - Averaged 25 per square foot of withers area on cattle. (Dorsey, July 3).
INDIANA - Ranged 100-800 (averaged 200) per head on pastured cattle in south-central and southeast districts; ranged 30-200 (averaged 50) per head on pastured cattle in central districts. (Huber).
ILLINOIS - Average per animal by district: Southeast 467, west 75, southwest 148, northwest 1, and west-southwest 103. (Ill. Ins. Rpt.).
SOUTH DAKOTA - Continues to increase on untreated herds in southeast area. Ranged 100-300 per side on herds observed in Lake, Miner, Sanborn, Jerauld, and Aurora Counties. (Jones, Kantack). Ranged 30-200 per side on untreated Hereford and Angus cattle north of Wagner, Charles Mix County; up to 500 per side on bulls. (Alleman, Coffman).
NEBRASKA - Up to 500 per head in herd near Lincoln, Lancaster County. (Campbell).
MISSOURI - Counts from 6 herds in central area averaged 208.5, 148.5, 118.9, 384.7, and 383.5 per head. (Thomas).
KANSAS - Ranged from 15 to over 1,000 per head in most eastern areas. (Simpson).
OKLAHOMA - Decreased on cattle checked in north-central and northwest counties. Ranged 200-500 per head on mature cows. Heavy on cattle in Mayes County. (Okla. Coop. Sur.).
ARKANSAS - Ranged 300-500 per animal in Independence County. (Roberts).
MISSISSIPPI - Generally light due

to increased use of controls on herds. Counts per head by county: Pike, 60 on 100 head; Hinds, 20 on 178; Washington, 10 on 150; Attala, 25 on 350; Jefferson Davis, 200 on 75 head. (Dinkins).

STABLE FLY (Stomoxys calcitrans) - NEBRASKA - Heavy, 15-30 (average 20) per leg, on 2 dairy herds in Lancaster County. Averaged 15-20 per leg on 10 feedlots checked in Saunders and Lancaster Counties; highest count 30-35 per leg. (Campbell). KANSAS - Ranged 6-50 per head in many eastern areas. (Simpson). ILLINOIS - Average per animal by district: Southeast 6, west 1, southwest 27, northwest 0, and west-southwest 23. (Ill. Ins. Rpt.). WISCONSIN - Moderate to severe on cattle in Clark, Columbia, Grant, and St. Croix Counties. (Wis. Ins. Sur.).

DEER FLIES - WISCONSIN - Population high in most sections, particularly in wooded areas. Annoyance to man severe locally in Washburn, Vilas, Juneau, and Adams Counties. (Wis. Ins. Sur.). RHODE ISLAND - Chrysops spp. adults biting but not numerous July 9. (Field).

BLACK FLIES - WISCONSIN - Numerous throughout State, particularly near streams; annoyance common some distance from water in several instances. (Wis. Ins. Sur.). RHODE ISLAND - Total of 5 Simulium spp. bites in 10 minutes in Washington County July 5. (Field).

FACE FLY (Musca autumnalis) - WASHINGTON - Adults 1-5 per beef animal at Prosser, Benton County; generally light in lower Yakima Valley. (Telford, July 5). SOUTH DAKOTA - Continues low on cattle in southeast area; averaged less than 2 per animal on herds checked. (Jones et al.). NEBRASKA - Ranged 3-4 per face in herd near Lincoln, Lancaster County. (Campbell). MISSOURI - Counts (10-cow samples) in 6 herds in central area averaged 0.7, 6.5, 2.5, 6.5, 3.4, and 5.1 per head. (Munson). ILLINOIS - Average per animal by district: Southeast 1.2, west 6.5, southwest 16, northwest 7, and west-southwest 19. (Ill. Ins. Rpt.). WISCONSIN - Annoyance to cattle moderate in most areas; severe in St. Croix County, low in Grant County. St. Croix is a new county record. (Wis. Ins. Sur.). INDIANA - Increased rapidly on pastured cattle last 2 weeks. Counts per head by district: South-central 12-21, southeast 22-78, east-central 14-61, central 8-63, and west-central 14-37. Most severe insect condition encountered during this period. (Huber). WEST VIRGINIA - Averaged 10-25 per face on cattle. (Dorsey, July 3). VERMONT - Annoying pastured cattle in all areas. (MacCollom).

HOUSEHOLDS AND STRUCTURES

A WEEVIL (Hexarthrum ulkei) - PENNSYLVANIA - Infested pine post in home in Beaver County May 6, 1968. Det. by R.E. Warner. This is a new county record. (Adams).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults averaged 9 per 100 sweeps in western alfalfa fields. (Parshall). ARKANSAS - Very low in cotton and soybeans in Jefferson County. (Boyer).

DAMSEL BUGS (Nabis spp.) - WYOMING - Adults and nymphs averaged 8 per 100 sweeps in western alfalfa fields. (Parshall). ARKANSAS - Averaged 2 per 30 row feet in soybeans. (Boyer).

A FLOWER BUG (Orius insidiosus) - ARKANSAS - Average 20 adults and 8 nymphs to 30 row feet of knee-high soybeans in Jefferson County. (Boyer).

GREEN LACEWINGS (Chrysopa spp.) - ARKANSAS - Most numerous predators in cotton in Jefferson County. Eggs not numerous but larvae ranged 10-40 and pupae 1-3 per 40 row feet. (Boyer).

A NEMESTRINID FLY (Neorhynchocephalus sackenii) - OREGON - Two specimens of this grasshopper parasite collected in small alfalfa field July 9 at Canby, Clackamas County. Usually found in native grasslands or in old, undisturbed pastures. (Westcott).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - In High Plains area, damage 15 percent in early cotton in Mitchell County. Total of 5 overwintered weevils found in 4 fields inside control zone in Kent County; punctured squares in 6 fields. Adults and/or punctured squares in 9 Kent County fields. (Almand, July 9). For Boll Weevil in other areas see page 668-669.

CARIBBEAN FRUIT FLY (Anastrepha suspensa) - FLORIDA - Numbers caught increased in recent weeks, counts at Tampa Bay showing much increase. Recent catches on northern fringe area include those at Daytona Beach, Volusia County, and at Forest City, Seminole County. (Fla. Coop. Sur.).

EUROPEAN CHAFER (Amphimallon majalis) - NEW YORK - Mating flight observed at Starkey, Yates County, July 2; few isolated reports of flights in Niagara County. (N.Y. Wkly. Rpt., July 8).

GRASSHOPPERS - NEW MEXICO - Nymphs light to heavy in Torrance County; highest count 32 per square yard at Progresso. No large area of solid infestation. Drepanopterna femoratum dominant. (Judd). Second to fourth instars 0-1 per square yard in Socorro and Catron Counties. (Hare). Causing extensive damage to ornamentals around homes in Albuquerque area, Bernalillo County; much control in progress. (Heninger). COLORADO - Second to fifth instar Melanoplus spp. counts per square yard by county: Cheyenne 0-20; Kit Carson averaged 5-10 in borders; Washington 0-15 (average 5 in borders); Yuma 5-10 (average 8 in borders); Phillips 0-8; Sedgwick averaged 5 in borders; Logan, Adams, and Morgan 0-60 (average 10-15 in borders). Damage light to moderate in most areas. (Johnson). First to third instars abundant in vacant lots and border rows around fields in Mesa County; controls applied. (Bulla). WYOMING - Range grasshoppers 14 per square yard at Glendo study area and 10 per square yard at Guernsey study area July 9-10. Aulocara elliotti and Cordillacris occipitalis 50 percent adults. Ageneotettix deorum dominant, mostly fourth and fifth instars. (Pfadt). NEBRASKA - Nymphs averaged 5 per square yard in field borders and ditches in Nemaha County; mostly Melanoplus spp. (Roselle). Nymphs up to 10 per square yard in rangeland northwest of Crawford, Dawes County. (Hagen). NORTH DAKOTA - Scattered economic infestations continue in Richland and Ransom Counties but damage light to date. Marginal counts ranged up to 25 (average 4) per square yard; up to 40 per square yard in some alfalfa. M. sanguinipes, M. bivittatus, and M. packardii dominant where higher numbers found. Development ranged third instar through adult. (Brandvik, McBride). In rangeland areas in southwest, infestations noneconomic with counts up to 10, but averaged less than 1 per square yard in Billings, Golden Valley, and Slope Counties. Species present in these areas include: M. sanguinipes (1-3 instar), M. dawsoni (1-2 instar), M. keeleri (1-2 instar), Amphitornus coloradus (2-3 instar). (Toczek, Grassler). MINNESOTA - Cool, wet weather past few weeks decreased much of early hatch in central and west-central districts. Some third and fourth instars present in light sandy soil areas, but counts down in most fields. M. bivittatus most affected by unfavorable weather and early hatching M. femurrubrum to lesser extent. Light marginal feeding on corn, small grain, and soybeans observed in central districts. First instar M. femurrubrum 2-3 per square yard in few alfalfa fields in Yellow Medicine, Lac qui Parle, and Redwood Counties. M. femurrubrum hatch increased since first-cutting alfalfa removed. (Minn. Ins. Rpt., July 8). WISCONSIN - M. femurrubrum hatch well underway in some southern areas; few second instars present; ranged up to 8 per sweep along alfalfa margins in sandy soil areas. M. sanguinipes nymphs less common, mostly third instar. Few M. differentialis third instars observed near Brodhead. (Wis. Ins. Sur.).

GYPSY MOTH (Porthetria dispar) - PENNSYLVANIA - Caused almost complete defoliation of hardwood and hemlock on 60 acres in Berks County near Schuylkill County line. Pupation 75 percent July 1. (Jeffery). NEW JERSEY - Larvae reported in Martinsville area. (Ins.-Dis. Newsltr.).

JAPANESE BEETLE (Popillia japonica) - INDIANA - First adults of season feeding on smartweed July 8 near South Bend, St. Joseph County. (Porter). OHIO - First adults of season July 5 on Morgan County roses. (Jones). WEST VIRGINIA - Adults numerous in St. Albans. (Cole, June 29). VIRGINIA - Light feeding on tassels of corn in Appomattox and Giles Counties. Up to 25 adults per 100 sweeps feeding on red clover heads in Buckingham, Giles, and Pittsylvania Counties. Adults 150 per 100 row feet, injury light to moderate on 12-inch soybeans in Pittsylvania County. (Allen). Medium to heavy on soybeans and peanuts in Nansemond County. Much ragging of foliage, but noneconomic. (Smith). MARYLAND - Adults damaged 20 percent of 35-acre corn stand near Sudlerville, Queen Annes County. Increasing soybean damage expected on shore and southern area in next few weeks. Adult defoliation 20 percent on 10 acres in Easton, Talbot County, and 10 percent on 15-acre field near Hughesville, Charles County. Heavy on rose at Laurel, Prince Georges County. Above normal infestations expected on crops and ornamentals on shore and in southern area in 1968. (U. Md., Ent. Dept.). NEW JERSEY - Adults appearing in many areas. (Ins.-Dis. Newsltr.). RHODE ISLAND - Heavy in Johnston, Providence County; adults light in Smithfield and scattered in Kingston July 8. (Field). VERMONT - First adult on raspberry at Burlington and Rutland. (MacCollom).

MORMON CRICKET (Anabrus simplex) - NEVADA - Up to 5 per square yard on 600 acres in Davis Canyon, in Diamond Mountains on Eureka and White Pine County line. (Dann).

PINK BOLLWORM (Pectinophora gossypiella) - NEW MEXICO - Beginning to find rosetted cotton blooms in southern Eddy County, especially in fields with heavy infestations in 1967. Total of 8 moths taken in 10 sex lure traps on one night. (Nielsen et al.). Moth counts in 11 sex lure traps in southern Dona Ana County as follows: 19 moths July 8; 18 moths July 9; 8 moths July 10; and 1 moth July 11. (Adams). Moth counts in other sex lure traps by area: Leasburg and Brazito 0; Vado 2 in 6 traps; Anthony 1 in 5 traps; and south of Anthony 10 in 5 traps. (N.M. Coop. Rpt.). ARIZONA - Buildup not following same pattern as in 1967. Larvae easily found in rosetted as well as open blooms and also in bolls in majority of counties by mid-June 1967. Numbers significant only in Graham and Yuma Counties in 1968. Boll infestations 2-40 percent in some Yuma County fields. Adult counts light in sex lure traps; very few moths noted from cage emergence. (Ariz. Coop. Sur.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - ALABAMA - Larvae continue to damage soybeans in scattered fields in Monroe County; damage 20 percent to stand at Megargel. (Lemons et al.). NORTH CAROLINA - Adults heavy and causing much foliar damage on some early soybean fields in Union County; larval damage moderate to one young field. (Savage). MISSOURI - G. leucoloma striatus collected by L.D. Seagraves at Cardwell, Dunklin County, July 1, 1968. Det. by R.E. Warner. This is a new State record. (Munson).

HAWAII INSECT REPORT

Turf, Pasture - A GRASS WEBWORM (Herpetogramma licarsisalis) continues to spread to previously uninfested areas of Maui. Damage spotty in 100 acres of Kikuyu grass in Ulupalakua at 2,000 feet elevation; larvae up to 25 per square foot; Eucelatoria armigera (a tachina fly) and Casinaria infesta (an ichneumon wasp) moderate in area. Adults heavy throughout Maui from 0 to 3,000 feet elevation. On Oahu, larvae decreasing at Kualoa, but light to medium numbers reappearing at golf course and parks at Kaneohe. (Miyahira, Au). Nymphs and adults of GRASS FLEAHOPPER (Halticus chrysolepis), a LEAFHOPPER (Deltoccephalus hospes), and a FLEAHOPPER (Spanogonicus albofasciatus) light to medium, 3-8 per square foot, on Bermuda grass in parks and golf courses on Oahu. (Chang). A BILLBUG (Sphenophorus venatus vestitus) remains generally light in lawns and pastures throughout State. (Yoshioka et al.).

Vegetables - DIAMONDBACK MOTH (Plutella xylostella) larvae and pupae medium on broccoli at Pupukea and Waimanalo; on daikon at Pearl City, Koko Head, and Waianae, Oahu. (Funasaki). CARMINE SPIDER MITE (Tetranychus telarius) generally medium to heavy on various crops and weeds in all farm areas of Oahu; heaviest on snap bean, eggplant, daikon, and watermelon. LEAF MINER FLIES (Liriomyza spp.) medium to heavy in all green onion fields at Waimanalo and Koko Head and in mustard cabbage, Chinese squash, snap bean, watermelon, and tomato fields throughout Oahu. (Sato, Yamamoto).

Fruits - LARGE MANGO TIP BORER (Bombotelia jocosatrix) larvae remain trace on mango throughout Oahu. Surveys negative for a STINK BUG (Plautia stali) on various fruit trees, ornamentals, and weeds. Few additional specimens collected in light traps during past month in Honolulu, Oahu. (Higa).

Ornamentals - Nymphs and adults of a LEAFHOPPER (Protalebrella brasiliensis) heavy, averaged 40 per sweep, on wedelia at Kaneohe, Honolulu, Waipahu, and Waianae on Oahu; foliar damage conspicuous in some areas. (Funasaki).

Beneficial Insects - LANTANA HISPID (Uroplata girardi) larvae and adults medium on 25 acres of lantana in Ulupalakua, Maui, at 1,600 feet elevation. (Ah Sam). Adults of a TACHINA FLY (Trichopoda pennipes) medium on various wild blossoms from 0 to 2,500 feet elevation in many areas of Maui, including Kihei, Kahului, Makawao, Kula, and Lahaina. (Miyahira).

CORRECTIONS

CEIR 18(23):486 - SOUTHWESTERN CORN BORER (Diatraea grandiosella) - TEXAS - Should read A CRAMBID MOTH (Diatraea sp.). (Texas Coop. Rpt.).

CEIR 18(28):630 - EUROPEAN CORN BORER (Ostrinia nubilalis) - NEW YORK - "Infested 25 percent of plants..." should read "Infested 25-50 percent of plants..." (N.Y. Wkly. Rpt.).

INSECT DETECTION

New State Record

LETTUCE ROOT APHID (Pemphigus bursarius) - NORTH CAROLINA - On Lombardy poplar at Zebulon, Wake County, July 2, 1968. Collected by F. Whitfield. Det. by C.F. Smith. (p. 676).

A WHITE-FRINGED BEETLE (Graphognathus leucoloma striatus) - MISSOURI - Collected by L.D. Seagraves at Cardwell, Dunklin County, July 1, 1968. Det. by R.E. Warner. (p. 680).

New County Records

WESTERN CORN ROOTWORM (Diabrotica virgifera) - MISSOURI - Vernon, Cedar, and Hickory Counties. (p. 664-665).

ALFALFA WEEVIL (Hypera postica) - MISSOURI - Polk County. (p. 666).

CLOVER HEAD WEEVIL (Hypera meles) - MISSOURI - Montgomery County. (p. 666).

CLOVER SEED WEEVIL (Miccotrogus picirostris) - OREGON - Coos County. MISSOURI - Ralls and Montgomery Counties. (p. 666).

MEADOW SPITTLEBUG (Philaenus spumarius) - VIRGINIA - Appomattox and Buckingham Counties. MISSOURI - Monroe and Pike Counties. (p. 667).

FACE FLY (Musca autumnalis) - WISCONSIN - St. Croix County. (p. 678).

A WEEVIL (Hexarthrum ulkei) - PENNSYLVANIA - Beaver County. (p. 678).

Weather of the Week continued from page 660.

Spotty showers fell in the central Great Plains almost daily. In general, they were light and widely scattered in the first half of the week but more numerous and heavier in the latter half. This was the second week in the Texas High Plains and Trans-Pecos with locally heavy showers. A few localities west of Lubbock received 3 to 4-inch showers. Showers fell in the Sierras and the desert in California early in the week and near the end of the week in western Washington and northwestern Oregon. Many western areas and a few widely scattered areas in the Central and East received no rain or only light sprinkles.

TEMPERATURE: The heat over the West increased until maximums in the 90's prevailed from border to border. Temperatures exceeding 100° were common in the southwestern deserts with some localities registering 110° to 116° on a few days. Miles City, Montana, registered 110° on Wednesday and Lewiston, Idaho, 105° on Thursday. Cooler weather prevailed in the East early in the week with afternoon temperatures ranging from the 70's in New England to the middle and upper 80's in Georgia, to 91° at Orlando, Florida, on Thursday. A southerly flow behind a large high pressure area brought warmer temperatures to the East late in the week. By Sunday afternoon, maximums had increased to the high 80's and low 90's from Florida to western New England. Albany, Buffalo, and Rochester, New York, registered 91° on Sunday afternoon. High humidity made the warm afternoon more uncomfortable. Cooler weather came to the Far Northwest late in the week when afternoon temperatures in western Montana remained in the 60's and 70's. (Summary supplied by Environmental Data Service, ESSA.)

LIGHT TRAP COLLECTIONS

	Temperature (°F)	Precipitation (inches)	Type of trap	Agrotis 0 = mercur 1 = incandescent 2 = blacklight	Carthagenia (codling moth)	Chorizanthe (army cutworm)	Setigera (salt-marsh caterpillar)	Parotia (wheat head armyworm)	Perithous (granular cutworm)	Heliothis (tobacco budworm)	Diaper (bollworm, corn earworm, tomato fruitworm)	Locustella (alfalfa webworm)	Locustella (cotton webworm)	Locustella (cotton webworm)	Manduca (tomato hornworm)	Manduca (tobacco hornworm)	Ornithobates (European corn borer)	Perithous (variegated cutworm)	Prodenia (yellow-striped armyworm)	Pseudocystus (armyworm)	Spodoptera (beet armyworm)	Spodoptera (cabbage looper)	Crops
KANSAS Manhattan 7/7			BL	2											1			2		2			
MINNESOTA Crookston 7/3-10																	13	1	1	1			
Fergus Falls 7/3-10																	18	1					
Shakopee 7/3-10																	3	1					
Worthington 7/3-10																	1	1					
MISSOURI Fair Grove 7/4-10				2													4	29	2	17			
Portageville 7/6-12				3														5	6	7			
NEW JERSEY Aura 7/3-10			BL	6														1		10			
Evesboro 7/3-10			BL	1													1	1		8			
Plainsboro 7/3-10			BL	2													1	2	1	7			
Seabrook 7/3-10			BL	10														4	1	45			
NORTH DAKOTA Bowman 7/8																							
Hazleton 7/8																							
OHIO Hilliard 7/4-10			BL	21													3			2			
Wooster 7/5-10			BL	11													1		2	2			
SOUTH DAKOTA Brookings 7/8-11			BL																				
TEXAS Brownsville 7/6-12	74-92	0.06	2BL	22			7										3	14	18	58			25
Waco 7/6-12	68-88	0.88																10	36	8	4		51
WISCONSIN Madison 7/3-10			BL	6	8												3	1		5			

The Spotted Mediterranean Cockroach, Ectobius pallidus (Olivier)
(Dictyoptera, Blattaria, Blattellidae), in the United States

Ashley B. Gurney 1/

This European cockroach was first found established in the United States in 1948, when outdoor collections at East Falmouth, Massachusetts, were reported (1). The spread of this insect has been slow, and until recently it was not known to extend beyond eastern Massachusetts, but in 1967 it was found in Michigan (7). In order that entomologists may be familiar with the recognition characters, distribution, and importance of the species, this note has been prepared. The names Ectobius livens (Turton) and E. lividus (F.) were used in early reports of the species in the United States (1, 2), but investigation of synonymy led to the adoption of Ectobius pallidus (Olivier). The common name has been adopted by the Entomological Society of America.

Ectobius pallidus (fig. 1) is a small species, about 8 to 9 mm. in overall length, including folded front wings (tegmina). General color is light yellow. Numerous small dark brown spots are conspicuous on the front wings and to a lesser extent on the pronotum. The hind wing is notable for a large veinless area at the apex known as the intercalated triangle (fig. 2, itr). Each tarsus bears 2 small claws, the posterior one of each pair clearly longer than the anterior one (fig. 3). The terminal ventral segment of the adult male abdomen bears a single stylus (fig. 4, st). A more detailed description was published in 1953 (2).

This species has been collected in 10 towns within 3 counties of eastern Massachusetts: Middlesex (Natick, Sherborn); Plymouth (Duxbury, Manomet, Plymouth); and Barnstable (Cotuit, Falmouth, East Falmouth, Osterville, West Yarmouth); the most distant of these towns (Sherborn, West Yarmouth) are about 65 miles apart. The two Michigan localities are Bloomfield Hills (Oakland County, about 20 miles north of Detroit), and Detroit.

Abroad, Ectobius pallidus occurs in southern England, Germany, Belgium, France, Italy, Spain, and Portugal (3), as well as in Algeria and Tunisia in North Africa. Among European populations of pallidus, two subspecies and a variety are based on color differences (3). The small dark brown spots on the front wings are less conspicuous in English specimens than in American ones or those from some continental European areas; and it seems probable that the stock leading to the establishment of the species in the United States originated in Portugal or elsewhere in southern Europe. The large number of people of Portuguese ancestry living in the Cape Cod area of Massachusetts, where the first established colonies were found, and their frequent contacts with Portugal, suggest that country as a possible source.

E. pallidus is primarily an outdoor species, living in a variety of field habitats (2, p. 44). Roth and Willis (6) found it at Plymouth, Massachusetts, "numerous under leaf litter in shaded woods." At East Falmouth, Massachusetts, Flint (1) found pallidus active at night running about on trunks of oak trees but in the day hiding under loose lichens and bark, in the bases of Swiss chard plants, under boxes and baskets, and in other outdoor situations. Of its occurrence in southern England, Ragge (4, p. 74) says "Though perhaps most frequently occurring in woodland [it] may also be found on heaths, downland and even sand-dunes. In warm weather, when this insect flies readily, it often occurs on bushes or trees."

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At least three houses in the United States are known to have become infested by E. pallidus. One of the infested houses in Massachusetts was a cottage in a wooded area with underbrush close by; the cottage was said to be overrun by the cockroaches, which even hid beneath shingles of the roof. The Bloomfield Hills, Michigan, colony clustered on the bark of an oak tree in the yard of a house. The cockroaches accumulated on outside brick walls and around basement windows, and some individuals squeezed through small openings and entered the house. No details of the Detroit colony are available, though apparently it was large enough to suggest several years' development.

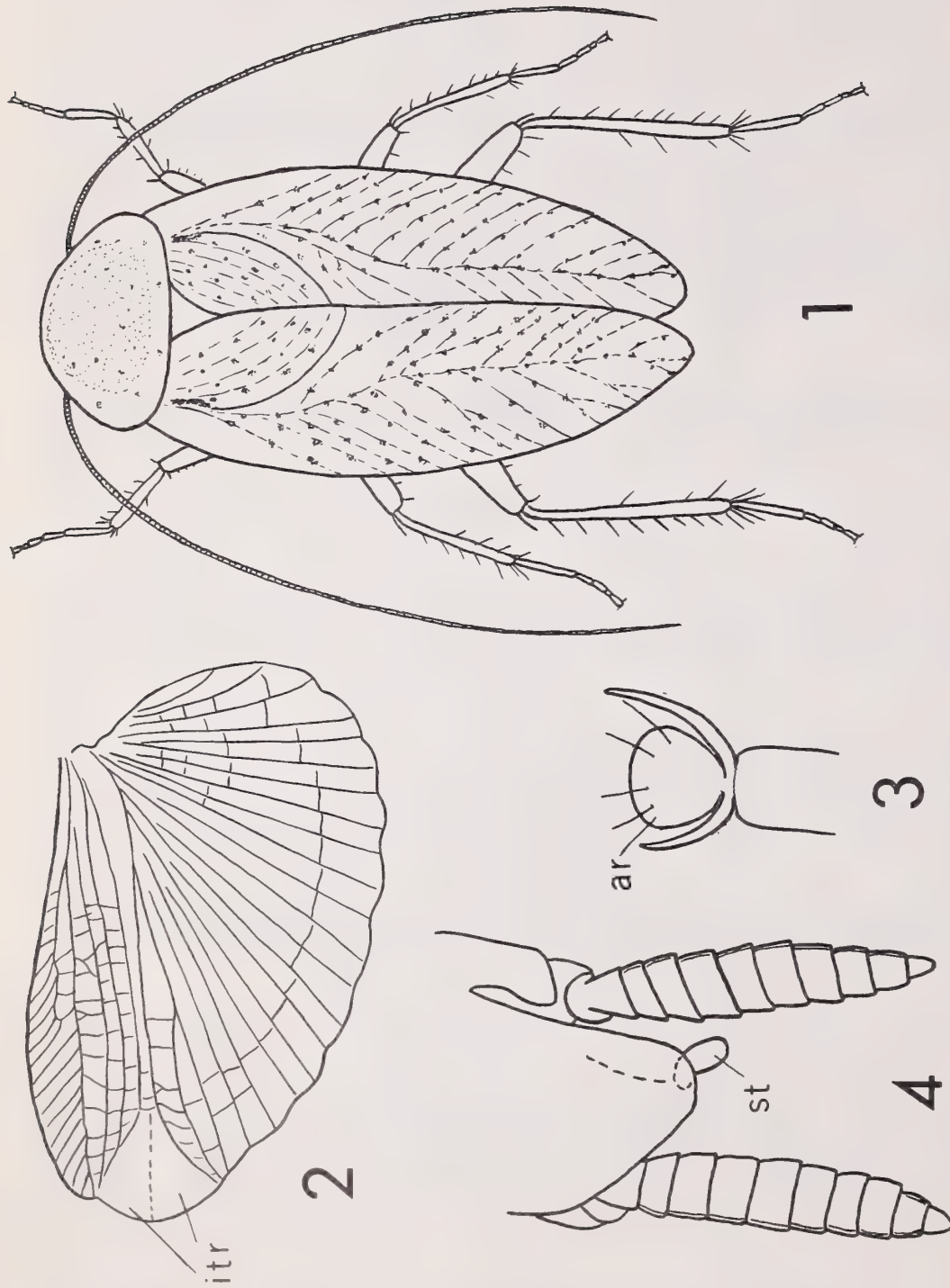
The biology of Ectobius pallidus is not known fully, but it appears that there are five to six nymphal stages and that overwintering occurs primarily in the egg stage, also probably in part as nymphs. A dormant period or diapause for eggs prior to hatching seems necessary, and moisture is required for the swelling and final development of the eggs (6). Egg cases (oöthecae) have been illustrated by Roth (5, figs. 147, 148). Adults appear early in summer and die by late fall or early winter.

This cockroach is unlikely to become an important pest, but gradual spread in this country and occasional instances of indoor infestation are to be expected.

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7. U.S. Dept. Agr. Coop. Econ. Ins. Rpt. 1967. 17(49):1046.

See page 686 for illustrations



1. General appearance. 2. Hind wing. 3. End of tarsus, showing apical pad (arolium) and claws of unequal length. 4. Ventral view of end of male abdomen.
Abbreviations: ar- arolium; itr- intercalated triangle; st- stylus.

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